

**15ACS02-COMPUTER PROGRAMMING LAB**  
(Common For All Branches)

**L T P C**  
**0 0 3 2**

WEEK	LIST OF EXPERIMENTS
1	Practice DOS Commands necessary for design of C Programs.
2	Practice LINUX Commands necessary for design of C Programs.
3	Practice the Raptor Tool
4	<ul style="list-style-type: none"> <li>a. Write a program to perform arithmetic operations.</li> <li>b. Write a program to exchange two numbers without using temporary variable</li> <li>c. Write a program to exchange two numbers with temporary variable</li> <li>d. Write a program to find the maximum of three numbers</li> </ul>
5.	<ul style="list-style-type: none"> <li>a. Write a program for <math>s=ut+1/2at^2</math></li> <li>b. Write a program to find area of square, circle and rectangle.</li> <li>c. Write a program to find the maximum of two numbers using ternary operator.</li> <li>d. Write a program for sum of first N natural numbers.</li> </ul>
6	<ul style="list-style-type: none"> <li>a. Write a program to compute the factorial of a given number.</li> <li>b. Write a program to check whether the number is prime or not.</li> <li>c. Write a program to check for number palindrome.</li> <li>d. Write a program to generate Fibonacci numbers in the given range.</li> </ul>
7	<ul style="list-style-type: none"> <li>a. Write a program to find the sum of the digits of a number.</li> <li>b. Write a program to find the sum of positive and negative numbers in a given set of numbers.</li> <li>c. Write a program to perform the operations addition, subtraction, multiplication of complex numbers.</li> <li>d. Write a program to find the sum of first and last digit numbers in a given number.</li> </ul>
8	<ul style="list-style-type: none"> <li>a. Write a program to read two matrices and print their sum and product in the matrix form.</li> <li>b. Write a program to find the maximum of a set of numbers.</li> <li>c. Write a program to read matrix and perform the following operations.               <ul style="list-style-type: none"> <li>a. Find the sum of Diagonal Elements of a matrix.</li> <li>b. Print Transpose of a matrix.</li> <li>c. Print sum of even and odd numbers in a given matrix.</li> </ul> </li> </ul>
9	<ul style="list-style-type: none"> <li>a. Write a program to accept a line of characters and print the count of the number of Vowels, Consonants, blank spaces, digits and special characters.</li> <li>b. Write a program to insert a substring in to a given string and delete few characters from the string. Don't use library functions related to strings.</li> <li>c. Write a program to read two strings and perform the following operations without using built-in string Library functions and by using your own implementations of functions.               <ul style="list-style-type: none"> <li>i. String length determination</li> <li>ii. Compare Two Strings</li> <li>iii. Concatenate them, if they are not equal</li> <li>iv. String reversing</li> </ul> </li> </ul>
10	<ul style="list-style-type: none"> <li>a. Write programs using recursion for Factorial of a number, GCD, LCM, Towers of Hanoi.</li> <li>b. Write a program for tic-tac-toe game.</li> <li>c. Write a program to implement numerical methods Lagrange's interpolation, Trapezoidal rule.</li> </ul>

11	<p>a. Write a program to exchange two numbers using pointers.</p> <p>b. Write a program to calculate the length of string using pointers.</p> <p>c. Write a program to using pointers to read in an array of integers and print its elements in reverse order.</p> <p>d. Write a program to generate pseudo random generator.</p>
12	<p>a. Write a program to evaluate the sum of the following series up to 'n' terms  <math>e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \dots</math></p> <p>b. Write a program that prints a triangle of stars. Print 1 star in row 0, 3 stars in row 1, 5 stars in row 2, and so on. Here is what this looks like: For the non-star characters, use dot or space.</p> <pre> .....*..... .....***..... .....*****..... .....*****..... .....*****..... .....*****..... .....*****..... .....*****..... .....*****..... .....*****..... .....*****..... </pre> <p>c. Write a program to read student records into a file. Record consists of rollno, name and marks of a student in six subjects and class. Class field is empty initially. Compute the class of a student. The calculation of the class is as per JNTUA rules. Write the first class, second class, third class and failed students lists separately to another file.</p>
13	<p>a. Write a program to read last n characters of the file using appropriate file function.</p> <p>b. Write a program to copy the contents one of one file into another file using fgetc and fputc functions.</p> <p>c. A file consists of information about employee salary with fields employee id, name, Basic, HRA, DA, IT, other-deductions, Gross and Net salary. Initially only employee id, name, and basic have valid values. HRA is taken as 10% of the basic, DA is taken as 80% of basic, IT is 20% of the basic, other deductions is user specified. Compute the Gross and Net salary of the employee and update the file.</p>
14	<p>a. Write a program to perform Base (decimal, octal, hexadecimal, etc) conversion</p> <p>b. Write a program to read a set of strings and sort them in alphabetical order.</p> <p>c. Write a program to Convert Decimal to Hexa Decimal?</p> <p>d. Write a program to Convert Binary to Decimal?</p> <p>e. <b>Write a Program to Add two numbers using Command Line Arguments.</b></p>

**NEW PROGRAMS:**

1. Write a program to implement magic square.
2. Write a program to print 50 students details using structures.
3. Write a program to create one structure and declare it inside union then accept values for structure members and display them.
4. Write a program to find the speed of ordinary, express, super luxury buses based on their distance and time.
5. Write c Program to accept N integer numbers and store even and odd integers in separate arrays.
6. Write a c program to input real numbers and find the mean, variance and standard deviation.